

# Phenoloxidase activity in wild mussels (*Mytilus galloprovincialis*) exposed to Fluoranthene under different nutritional conditions



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## INTRODUCTION

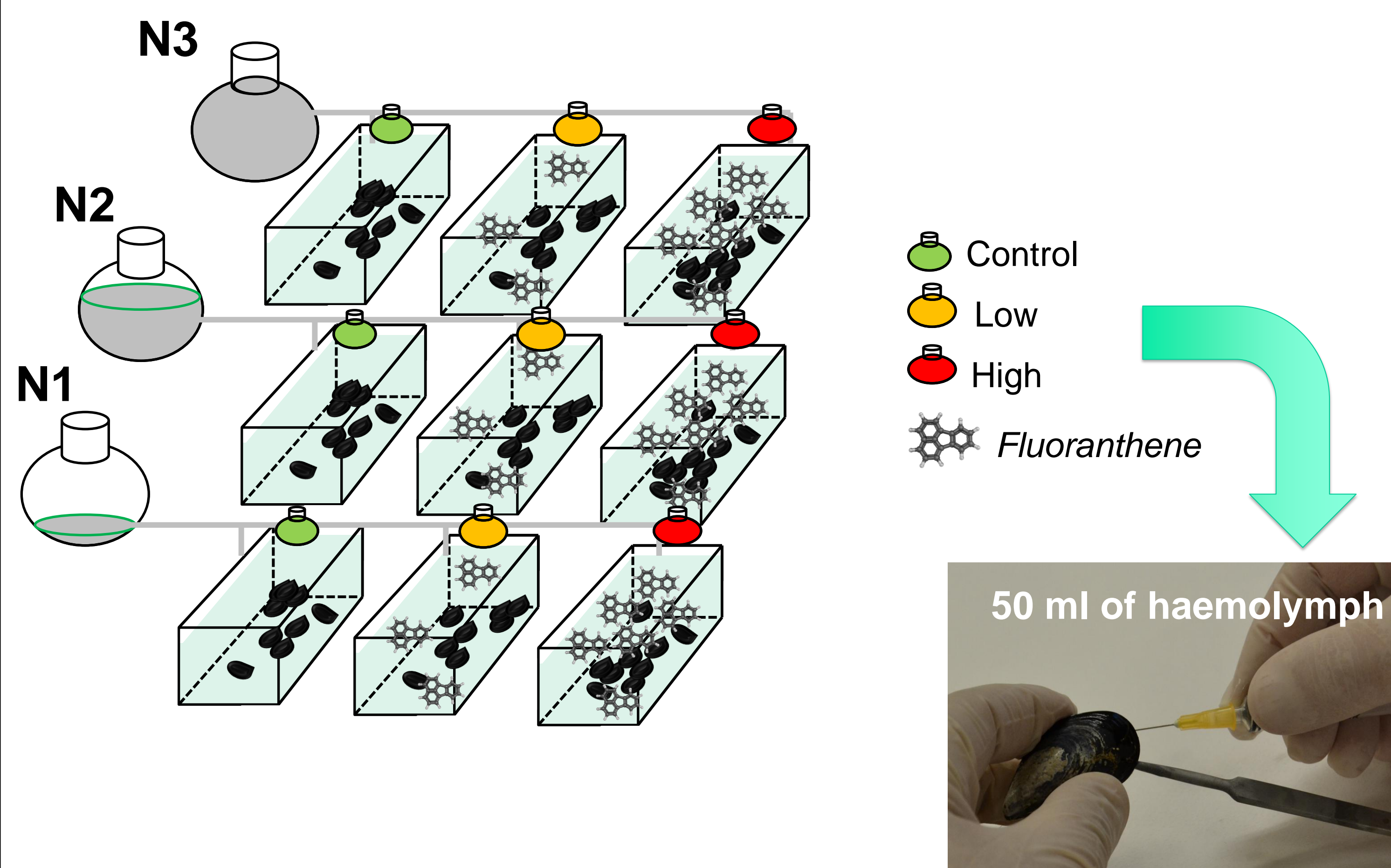
Immune parameters may be used as contamination biomarker, but immune response under different nutritional conditions is unknown in bivalves exposed to pollutants.

Phenoloxidase (PO) is an activity modulated by contaminants and it is considered as a prior response of organisms to pollution and could be a reliable biomarker in monitoring programs.

## MATERIALS AND METHODS

**Conditioning period:** 3 different rations: High ration (N3), intermediate ration (N2) and Low ration (N1) of the microalgae *Isochrysis galbana*, clone t-ISO, for a period of 45 days.

**FLU Exposure period:** 3 weeks



### Phenoloxidase activity:

Photocolorimetric method (Asokan et al., 1997), by formation of dopachrome from L-DOPA

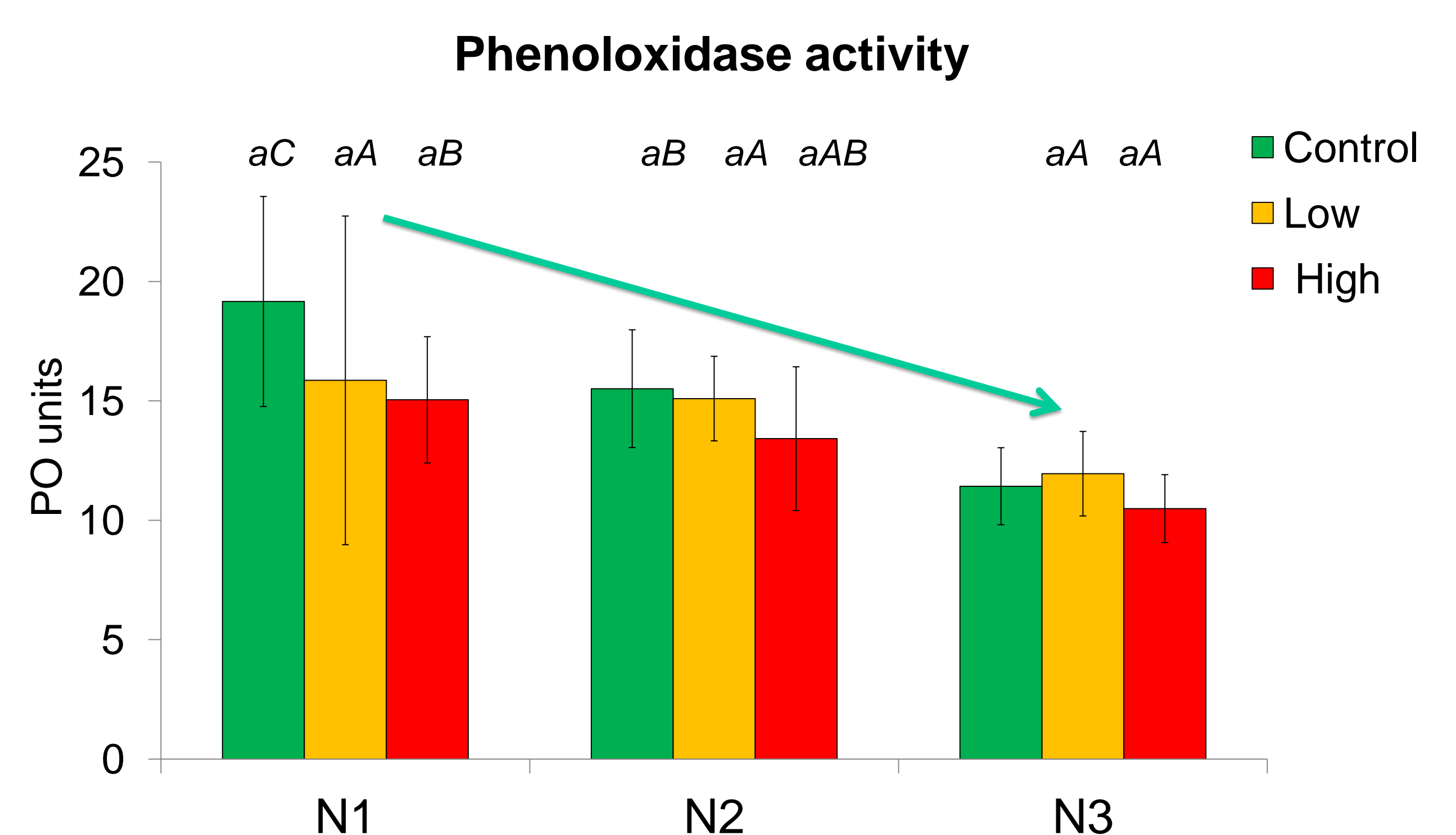
### Total protein concentration:

Bradford protein assay reaction (Bradford, 1976).

### Statistical analysis:

Two-way ANOVA analysis

## RESULTS



**PO activity was not affected by FLU exposure**  
**There was a significant effect of mussel condition on PO activity**

## CONCLUSION

**The effect of mussel nutritional status was so important that could mask the effect of pollutants**



## REFERENCES

Asokan R, Arumugam M, Mullainadhan P. 1997. Activation of prophenoloxidase in the plasma and haemocytes of the marine mussel *Perna viridis* Linnaeus. *Develop Comp Immuno*, 21(1):1-12.

Bradford, M.M., 1976. A rapid and sensitive method for the quantification of microgram quantities of protein utilizing the principle of protein-dye binding. *Anal. Biochem.* 72, 248-254

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